

The following Listing of Claims will replace all prior versions, and listings, of claims in the application.

LISTING OF CLAIMS:

1. (Currently Amended) A rotary fluid machine comprising:
a cylinder having an annular cylinder chamber formed as a space between a cylindrical inner periphery and a cylindrical outer periphery of the annular cylinder chamber;
an annular piston disposed in the cylinder chamber to be eccentric to the cylinder, the annular piston dividing the cylinder chamber into an outer working chamber and an inner working chamber, the annular piston having a cylindrical inner piston surface facing the inner periphery of the cylinder chamber and a cylindrical outer piston surface facing the outer periphery of the cylinder chamber; and
a blade arranged in the cylinder chamber, the blade extending in a radius direction from the outer periphery to the inner periphery of the cylinder chamber to divide each of the outer and inner working chambers into a high pressure region and a low pressure region, the cylinder and the piston making relative rotations,
the cylinder chamber having a radial width measured between the inner and outer peripheries of the cylinder chamber that is varied about a circumference of the cylinder chamber such that a gap between the inner periphery of the cylinder chamber and the inner piston surface of the piston and a gap between the outer periphery of the cylinder chamber and the outer piston surface of the piston are kept substantially smallest to a predetermined value during the rotations a full rotation, with a difference in fluid pressure between the outer working chamber and the inner working chamber taking place in the full rotation.

2. (Currently Amended) A rotary fluid machine comprising:
a cylinder having an annular cylinder chamber formed as a space between a cylindrical inner periphery and a cylindrical outer periphery of the annular cylinder chamber;
an annular piston disposed in the cylinder chamber to be eccentric relative to the cylinder, the annular piston dividing the cylinder chamber into an outer working chamber and an inner working chamber, the annular piston having a cylindrical inner piston surface facing the inner periphery of the cylinder chamber and a cylindrical outer piston surface facing the outer periphery of the cylinder chamber; and

a blade arranged in the cylinder chamber, the blade extending in a radius direction from the outer periphery to the inner periphery of the cylinder chamber to divide each of the outer and inner working chambers into a high pressure region and a low pressure region, the cylinder and the piston making relative rotations without spinning by themselves,

the piston having a radial width measured between the inner and outer piston surfaces that is varied about a circumference of the piston such that a gap between the inner periphery of the cylinder chamber and the inner piston surface of the piston and a gap between the outer periphery of the cylinder chamber and the outer piston surface of the piston are kept substantially smallest to a predetermined value during the rotations a full rotation, with a difference in fluid pressure between the outer working chamber and the inner working chamber taking place in the full rotation.

3. (Previously Presented) The rotary fluid machine according to claim 2, wherein

the cylinder chamber has a width that is varied along a circumference of the cylinder chamber such that the gap between the wall surface of the cylinder and the wall surface of the piston is kept to a predetermined value during the rotations.

4. (Previously Presented) The rotary fluid machine according to claim 3, wherein

the blade has a center line that is a starting point of the circumference of the cylinder chamber, a width of a part of the cylinder chamber ranging from the starting point to a point at a rotation angle of 180° from the starting point is larger than a width of another part of the cylinder chamber ranging from the 180° point to a point at a rotation angle less than 360° from the starting point.

5. (Previously Presented) The rotary fluid machine according to claim 4, wherein

a center of an inner circumference of the cylinder chamber is deviated from a center of the outer circumference of the cylinder chamber when viewed along a longitudinal axis of the cylinder chamber.

6. (Previously Presented) The rotary fluid machine according to claim 3, wherein

the cylinder chamber is divided into four regions about the circumference thereof such that the cylinder chamber has regions that are wider than other regions formed in a continuous and alternate manner therebetween.

7. (Previously Presented) The rotary fluid machine according to claim 2, wherein

the piston and the blade make relative swings at a predetermined swing center, and the swing center of the blade and the piston is a starting point of the circumference of the piston, a width of a part of the piston ranging from the starting point to a point at a rotation angle of 180° from the starting point is smaller than a width of another part of the piston ranging from the 180° point to a point at a rotation angle of 360° from the starting point.

8. (Previously Presented) The rotary fluid machine according to claim 7, wherein

a center of an inner circumference of the piston is deviated from a center of the outer circumference of the piston when viewed along a longitudinal axis of the piston.

9. (Previously Presented) The rotary fluid machine according to claim 2, wherein

the piston and the blade make relative swings at a predetermined swing center and the piston is divided into four regions about the circumference thereof such that the piston has two regions that are narrower than two other regions formed in a continuous and alternate manner therebetween.

10. (Previously Presented) The rotary fluid machine according to claim 1, wherein

the annular piston is C-shaped to form a gap,
the blade extends from an inner wall surface to an outer wall surface of the cylinder chamber and passes through the gap of the piston, and

a swing bushing is provided in the gap of the piston to contact the piston and the blade via the surfaces thereof such that the blade freely reciprocates and the blade and the piston make relative swings.

11. (Previously Presented) The rotary fluid machine according to claim 1, wherein

the blade has a center line that is a starting point of the circumference of the cylinder chamber, a width of a part of the cylinder chamber ranging from the starting point to a point at a rotation angle of 180° from the starting point is larger than a width of another part of the cylinder chamber ranging from the 180° point to a point at a rotation angle less than 360° from the starting point.

12. (Previously Presented) The rotary fluid machine according to claim 11, wherein

a center of an inner circumference of the cylinder chamber is deviated from a center of the outer circumference of the cylinder chamber when viewed along a longitudinal axis of the cylinder chamber.

13. (Previously Presented) The rotary fluid machine according to claim 3, wherein

the cylinder chamber is divided into four regions about the circumference thereof such that the cylinder chamber has two regions that are wider than two other regions formed in a continuous and alternate manner therebetween.

14. (Previously Presented) The rotary fluid machine according to claim 3, wherein

the piston and the blade make relative swings at a predetermined swing center, and the swing center of the blade and the piston is a starting point of the circumference of the piston, a width of a part of the piston ranging from the starting point to a point at a rotation angle of 180° from the starting point is smaller than a width of another part of the piston ranging from the 180° point to a point at a rotation angle of 360° from the starting point.

15. (Previously Presented) The rotary fluid machine according to claim 14,
wherein

a center of an inner circumference of the piston is deviated from a center of the outer circumference of the piston when viewed along a longitudinal axis of the piston.

16. (Previously Presented) The rotary fluid machine according to claim 3,
wherein

the piston and the blade make relative swings at a predetermined swing center, and
the piston is divided into four regions about the circumference thereof such that the piston has two regions that are narrower than two other regions formed in a continuous and alternate manner therebetween.